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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,322	03/29/2004	Chirag Deepak Dalal	VRT0125US	2702
60429	7590	04/10/2006	EXAMINER	
CSA LLP 4807 SPICEWOOD SPRINGS RD. BLDG. 4, SUITE 201 AUSTIN, TX 78759			VO, THANH DUC	
			ART UNIT	PAPER NUMBER
			2189	

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,322

Applicant(s)

DALAL ET AL.

Examiner

Thanh D. Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Application filed on March 29, 2004.

Claims 1-28 are presented for examination. Claims 1-28 are pending.

Specification

The disclosure is objected to because of the following informalities:

- a. "attribute X" in page 7, paragraph 0028, line 7.
- b. an attribute value of $X = X1$ in page 7, paragraph 0028, line 9.

The attribute disclosed is not being descriptive and/or pointing the technical aspect of the invention in order to enable the Examiner to make a reasonable search of the prior art.

Applicant is required to submit an amendment which clarifies the disclosure so that the examiner may make a proper comparison of the invention with the prior art.

Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. Claims 1-9, 13-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims set forth are claiming subject matter that consists solely of the manipulation of an abstract idea and does not consist of a physical transformation or accomplish a concrete or tangible result. See *In re Warmerdam*, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994), *Schrader*, 22 F.3d at 295, 30 USPQ2D at 1459, and *Arrhythmia*, 958 F.2d at 1057, 22 USPQ2d at 1036. Even though such a physical transformation occurs within a computer, such activity is not determinative of whether the process is statutory because such transformation alone does not distinguish a statutory computer process from a nonstatutory computer process.

For example, claim 1 claims the steps of “determining a specification” and “searching a plurality of existing storage regions”; however said steps does not achieve a practical application to carry out a concrete and tangible result. Therefore, claim 1 is directed to a non-statutory subject matter.

All dependent claims are rejected as having the same deficiencies as the claims they depend from.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2-12, 19-22, and 24-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject

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matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to claims 2, 19, and 24, the specification did not disclose in a way to enable the examiner to understand how: “the second set of storage regions **comprises** at least the first storage region” wherein as previously determined in claim 1(for example, which claims 2 depends from) that “if no existing storage is found corresponding to a first storage region in the first set of storage regions, determining a second specification for a second set of storage regions”. With respect to claim 9, the specification further failed to disclose or described in a way to enable the Examiner to understand the limitation of: “the second set of storage regions **excludes** a second storage region for which an existing storage region of the plurality of existing storage regions is found”.

All dependent claims are rejected as having the same deficiencies as the claims they depend from.

Appropriate correction is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-12, 19-22, and 24-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For example, claim 2 fails to particularly point out how claims 1 and 2 would be operative since a first storage region cannot be found (claim 1) then it would be unreasonable to have "a second set of storage regions **comprises at least the first storage region**" (claim 2). Similar deficiency can be found between claims 18 and 19, and claims 23 and 24.

All dependent claims are rejected as having the same deficiencies as the claims they depend from.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-9 and 13-28 are rejected under 35 U.S.C. 102(a) as being unpatentable by Soejima et al. (2003/0074528).

As per claims 1, 13, 18, and 23, Soejima et al. disclosed a system or method comprising:

determining a first specification for a first set of storage regions (page 2, par. [0018]), wherein the first set of storage regions is needed to perform an operation on a logical volume (page 2, par. [0017]), and the first set of storage regions satisfies an intent of the logical volume (page 2, par. [0019]);

searching a plurality of existing storage regions for a corresponding storage region for each storage region in the first set of storage regions (page 2, par. 0022, lines 1-6, and par. 0024); and

if no existing storage region is found corresponding to a first storage region in the first set of storage regions, determining a second specification for a second set of storage regions. *See Fig. 4, step 4007 and Fig. 6, steps 6002-6006, wherein an alternate plan is executed if the specification was not satisfied in Fig. 4, step 4007 and a new specification is set in Fig. 6 to determine if there are other storage regions that satisfied the new specification. See corresponding figure descriptions in specification for further clarification.*

As per claims 2, 19, and 24, Soejima et al. disclosed a method, wherein the second set of storage regions comprises at least the first storage region (*see Fig. 6, if there is not enough of unoccupied area satisfying the first requested capacity and access time (first specification) then it will search using an alternate plan (second specification). The method of looking for unoccupied area using a second specification shows that the second set of storage regions also comprises partial region of the first storage region that satisfies the first specification, see Fig. 9, 10, 11a-b, since the second set of storage regions is a combination of first and second specifications to search for available storage area.*

As per claims 3, 20, and 25, Soejima et al. disclosed a method, wherein the second specification for the second set of storage regions comprises an attribute of the first storage region (See Fig. 9-10, the attribute such as access time and demand/second are common/shared between the first and second storage regions), and a connection between the first storage region and a storage object in the logical volume *is an inherent feature of Soejima et al. since it is required in storage system to have a connection/pointer indicating which storage region in a logical volume where the storage object is being stored at in order to retrieve or delete the data whenever it is required.*

As per claims 4 and 14, Soejima et al. disclosed a method further comprising:
using the second specification to acquire a third set of storage regions. See Fig.7

As per claims 5 and 15, Soejima et al. disclosed a method, wherein the third set of storage regions is a subset of the second set of storage regions. Claims 5 and 15 are rejected under the same rationale as claims 2, 19, and 24 since searching for another unoccupied storage region as disclosed in Fig. 9-10 and Fig. 11a-b is a process of searching for remainder of unoccupied area wherein the remainder of the unoccupied area is a subset of the previously selected area.

As per claims 6, 16, 21, and 26, Soejima et al. disclosed a method further comprising:

acquiring the second set of storage regions (page 3, paragraph 0041, lines 1-12);
and

performing the operation on the logical volume using the second set of storage regions. *See Fig. 3 and corresponding figure description in specification regarding operation of creating the logical volume.*

As per claim 7, Soejima et al. disclosed a method, wherein the second set of storage regions satisfies the intent of the logical volume (page 2, par. [0019]).

As per claims 8, 17, 22, and 27, Soejima et al. disclosed a method further comprising:

determining a third specification (page 2, paragraph 0023), where in the determining the third specification comprises specifying an existing storage region of the plurality of existing storage regions to reserve for performing the operation (page 2, paragraph 0024).

As per claim 9, Soejima et al. disclosed the second set of storage regions excludes a second storage region in plurality of existing storage regions. See Fig. 11(a), wherein parity group 1 (comprising storage regions) does not include the physical disks (comprising storage regions) that are in parity group 2.

As per claim 28, Soejima et al. disclosed a computer system comprising:
a processor (Fig. 2); and
the computer-readable medium of claim 25 (see claim 25 rejection in respect to Soejima et al.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soejima et al. (2003/0074528) in view of Applicant Admitted Prior Art (hereinafter AAPA).

As per claims 10, 11, and 12, Soejima et al. did not explicitly disclosed a method wherein the operation comprises increasing a size of the logical volume, evacuating data from the logical volume, or relocating data of the logical volume.

However, AAPA disclosed the operation such as increasing the size of a logical volume, evacuating data from the logical volume, or moving a logical volume to a different physical location. See page 2, paragraph 0004, lines 5-7 of the Specification of AAPA. It would have been obvious to one having an ordinary skill in the art at the time of the Applicant's invention to realize that it is advantageous to apply the invention of Soejima et al. into said operations since the system will operate automatically without

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requiring a storage administrator to keep track of how particular volumes are implemented and enable the intent of a logical volume to be consistently maintained while avoiding common errors that might caused by the administrator.

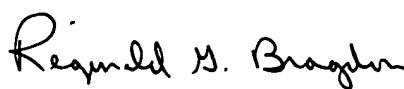
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh D. Vo whose telephone number is (571) 272-0708. The examiner can normally be reached on M-F 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald G. Bragdon can be reached on (571) 272-4204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Thanh Vo
Patent Examiner
Art Unit 2189
3/27/2006


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